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Institute of Social Security as A Factor of Innovative Development of The Petrochemical Complex

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Abstract

The problem of finding ways for the innovative development of the country became particularly acute for Russia in recent years. Global Innovation Index of Russia by INSEAD assessment in 2013 fell (62 among 142 countries in the world) and in terms of the innovative effectiveness Russia is only on 104th position. Stirring up innovative processes of the petrochemical complex is essential not only for the restructuring of this sector of the economy, but it is also a factor of development of entire regions of Russia. Aim of this study was to determine the influence of various institutions on the development of innovative mining and oil refining. Regional reserves savings and implementation of innovative potential of enterprises depends on the human factor. It has been revealed that the greatest significance for the disclosure of innovative capacity is a list of factors affecting increase in the degree of satisfaction with the quality of work life of employees. A special place in the development of quality of working life in the petrochemical complex has Social Security Institute. The key aspects of the implementation of social security programs in the petrochemical complex have been considered. The main problems of the social rights of working people in the social insurance system have been revealed. Key directions of development of voluntary social insurance in enterprises of the complex have been proposed.

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Keywords: petrochemical complex, innovative activity, quality of work life.

1. Introduction

At present moment, researches of economic development capacity issues in are directly linked with the

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possibility of the economy or a region to an increase of high-tech manufacturing. For example, a sixfold increase in high-tech production in China from 2003 to 2012 allowed the government to increase the share of the world market to 24% and high economic growth during the global economic crisis. Development of chemistry and petrochemistry is one of the key elements in achieving the indicators of innovation development in Russia. Though, the chemical industry consumes up to 25% of its own products that have been, at least, through a minimum-process, still, among the major sectors that determine the demand for products are automotive, textile, metallurgical industry, etc. So, growth in the share of innovative products of chemical production affects innovation in other industries. In 2013 was a process of preparation of the "Strategy of development of chemical and petrochemical complex through 2030" with accepted in March 2012 priorities in terms of development of gas and petrochemicals in Russia until 2030. The central idea of the Strategy is a cluster approach to the implementation of the project, industry investment growth, at least 180 billion rubles a year, and the growth of its capacity. The objectives of the strategy are also improvement of productivity by more than 5 times and the decline in the share of imports in the segment more than 7 times.

This ambitious project includes not only an extensive way to build up the volumes for overcoming the failures of the industry in the 90's, but intensification of the process, development and introduction of domestic innovation, including nanochemistry.

2. State of innovative activity of the chemical industry

Russian chemical production has a considerable potential for growth. However, government's role in stimulating innovation and investment has not demonstrated the expected efficiency. Most requested institutional changes by the owners of the chemical industry are not carried out, the legal framework does not work to forestall events.

As a result, the production index of the chemical industry, rubber and plastic products, manufacture of coke and petroleum products in 2012 is lower than it was 2000, Table 1 (HSE Data Books. National Research University Higher School of Economics, 2014)

Table 1. Production index, in %

	2000	2007	2008	2009	2010	2011	2012	2015*
Chemical production	115,2	106,6	95,4	93,1	114,6	105,2	101,3	175,2
Manufacture of rubber and plastic products	126,1	125,5	122,8	87,4	121,5	113,1	107,4	264,9
Manufacture of coke and petroleum products	102,4	102,8	102,8	99,4	105,0	102,9	102,2	-

* "Development Strategy for the chemical and petrochemical industry in Russia for the period up to 2015" forecast

Achievement of the targets of production index for 2015 in the framework of the current "Strategy of development of chemical and petrochemical industry in Russia to 2015" seems difficult. Russian chemical complex forms not more than 1.5% of the gross domestic product of Russia (estimate assessment for July 2013) while the implementation of the strategy involves at least 2.9% share of the chemical industry in 2015, indicating the omission in the implementation of strategy. Analysis of the indicators, presented in Table 2, 3, 4 and 5 (HSE Data Books. National Research University Higher School of Economics, 2014), including the aggregate level of innovation activity, the expenditure on innovation, the proportion of organizations implementing technological innovations, including the types of innovations, indicates actual failure of the strategy in terms of enhancing innovation processes in the industry.

Table 2. The aggregate level of innovation activity, in %

	2007	2008	2009	2010	2011
Chemical production	26,1	23,3	26,6	25,3	23,2
Manufacture of rubber and plastic products	29,2	36,2	35,7	32,1	31,7
Manufacture of coke and petroleum products	11,8	12,0	13,1	11,3	12,1

Table 3. Expenditure on innovation, including technological, organizational and marketing innovation, in million rubles and in %

	2007	2008	2009	2010	2011
Chemical production	22757,2	32488,5	26174,0	26413,0	28583,8
	(10,7)	(11,5)	(7,2)	(6,6)	(6,0)
Manufacture of rubber and plastic products	14786,3	16920,0	32814,0	44444,8	86139,0
	(6,9)	(6,0)	(9,0)	(12,5)	(18,2)
Manufacture of coke and petroleum products	5544,6	5704,7	3520,2	8222,7	7807,1
	(2,6)	(2,0)	(1,0)	(2,3)	(1,6)

Table 4. Share of organizations carrying out technological innovations in the total amount of organizations in directions of the petrochemical sector, in %

	2007	2008	2009	2010	2011
Chemical production	24,2	21,9	24,0	23,0	21,1
Manufacture of rubber and plastic products	27,1	31,9	32,7	30,2	31,7
Manufacture of coke and petroleum products	10,1	10,7	11,5	9,6	10,3

This way the index of production should grow at 73.9% by 2015, while in the period from 2010 to 2012 index drop was 11.6%. The aggregate level of innovation activity of organizations in chemical production for this period was 24.24% in average alongside with the fall of index since 2009.

The most illustrative data is in Table 3, where, for example, the proportion attributable to the chemical industry in the segment throughout the extractive industries, manufacturing, production and distribution of energy, gas and water are indicated in percentage. During the study period, the average share of the chemical industry was 8.4%, while the cost of all kinds of innovations in 2011 (6.0%) is almost two times lower than in 2008 (11.5%).

The share of chemical production enterprises engaged in technological innovation does not exceed an average of 22.8% or slightly more than one fifth of all enterprises of this kind of economic activity. At the same time, since 2009 this figure is decreasing: in 2009 - 24.0%,in 2011 - 21.1%, which together with a reduction in rates of reduction in the financing of innovation shows no obvious fact about the relationship, but a problem support of innovative development.

3. Human resources of the enterprises of a petrochemical complex.

At the heart of innovative economy is innovative production of the enterprises where the available human resource is used with orientation to development of the specific human capital. The enterprises of innovative economy are interested in a gain of the personnel specific capital since it leads to development and profit growth (Lester & Thurow, 1997). We will reveal the main tendencies of work with the personnel at the enterprises carrying out technological innovations.

At the enterprises of a petrochemical complex the specific weight of the enterprises, which have research, design divisions, is traditionally high. So a share of such organizations in chemical production on the average 55%, in production of coke and oil products of 58%, and in production of rubber and plastic products of 38%. However the tendency of falling of indicators, since 2008-2009 for all enterprises of a petrochemical complex is here fixed too. The analysis of number of the personnel of special structural divisions making researches and development (on the complex enterprises) shows that since 2007 on chemical production there was a staff reduction by 1,8 times, in production of coke and oil products by 4 times, and on production of rubber and plastic products by 1,4 times, table 5(HSE Data Books. National Research University Higher School of Economics, 2014).

Table 5. Indicators on the personnel of the organizations, carrying-out technological innovations, by types of economic activity.

	2007	2008	2009	2010	2011
Chemical production, number of the divisions which are carrying out researches and development	169	158	147	167	150
Number of workers, people (Specific weight of the workers who are carrying out researches and development in total number of employees of the organization, %)	6717(2,8)	4928(2,3)	4563(2,1)	4625(2,4)	3719(2,1)
Manufacture of rubber and plastic products, number of the divisions which are carrying out researches and development	31	26	32	26	25
Number of workers, people (Specific weight of the workers who are carrying out researches and development in total number of employees of the organization, %)	5189(7,9)	1320(1,7)	1493(2,0)	1337(1,7)	1256(1,7)
Manufacture of coke and petroleum products, number of the divisions which are carrying out researches and development	62	56	61	45	46
Number of workers, people (Specific weight of the workers who are carrying out researches and development in total number of employees of the organization, %)	1155(1,9)	1080(1,9)	1135(2,3)	839(1,8)	814(1,9)

Specific weight of the workers who are carrying out researches and development from the total number of employees of the organization on chemical production averaged 2,3%, and on production of rubber and plastic products of 1,9% during the period from 2007 to 2011. Data on a share of the enterprises of the chemical production, which is carrying out various actions within technological innovations are provided in table 6 as an example, including training and personnel preparation.

Table 6. Percent of the enterprises of the chemical production, which is carrying out technological innovations by types of innovative activity

	2007	2008	2009	2010	2011
Researches and development	6,6	6,2	5,8	7,3	6,3
Production design	6,3	7,3	8,8	8,3	8,0
Acquisition of cars and equipment	4,3	4,5	5,2	4,9	4,6
Acquisition on patents and licenses	9,3	5,1	4,0	4,4	4,2
Acquisition of software	4,4	3,0	3,6	2,7	3,2
Other types of preparation of production	5,5	4,2	6,3	7,5	6,6
Training and personnel preparation	5,0	5,6	5,3	4,7	3,9
Market researches	6,7	7,2	6,3	6,5	5,9
Other	10,8	8,9	11,4	9,1	9,6

In our opinion simultaneous reduction of the personnel attracted for the purpose of development of new production, at decrease in qualitative expenses on maintenance of the specific human capital testifies that the enterprises don't stake on actually human capital. Data on other directions of innovative activity also testifies about it. In such conditions it is difficult to predict innovative activity in a section of development of the Russian innovations in a petrochemical complex.

In conditions when the state, counting on attraction of investments, was actually eliminated from financial support of branch, except socially significant productions, and problems of attraction of financial resources by the enterprises of a petrochemical complex in the financial market the innovative future of sector of economy will already depend on strategic steps now.

In the "Strategy of Development of a Chemical and Petrochemical Complex till 2030" project financing of sector has to be irrespective of the state investments. High transportation costs - to 50% of prime cost, outdated capacities and expensive electric power according to the President of the Russian Union of chemists, Victor Ivanov, define a difficult situation of branch and need for search of ways of its decision. Thus that in Russia there are examples when the private companies, for example, "Sibur - Neftekhim" for development of innovations I created own research center, as a whole there is not enough attention to the personnel work of the enterprise.

4. Conclusion

In the work (Fakhrutdinova, Karasik, Safina & Miropol'skaya, 2013) the author's point of view on system of social insurance in Russia as a whole, and also some directions of its development for the purpose of improvement of quality of labor life was designated. At this condition of developments of a petrochemical complex in Russia work of the enterprises on activation of programs of social insurance is necessary for preservation and attraction of perspective scientific shots, including scientific shots of the enterprises. As a rule, working conditions in the central factory laboratories, scientifically – research departments at the enterprises don't treat work in heavy or especially dangerous conditions, on workers the measures of social protection interfaced to working conditions, such as, for example an early retirement don't extend. For a petrochemical complex there is to the most demanded an idea of creation of professional pension systems within social insurance of able-bodied citizens at able-bodied age. The moratorium on the translation of accumulative part of contributions from the Pension fund, entered in Russia for a year considerably undermined the potential of development of non-state pension funds. Large petrochemical holdings, such as TAIF group of companies developing and this institute of social protection of working citizens, can speed up work on non-state pension provision within corporate programs. Also within corporate programs for voluntary medical insurance for employees of the enterprises of the chemical industry, including scientific shots it is

possible to increase extent of their coverage by measures of social protection and to provide preservation of innovative personnel capacity of branch in the period of uncertainty and reforming.

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